

We claim:

1. A method of thermocatalytic pollution control comprising the steps of:
passing a target pollutant into a thermocatalytic reactor having at least one catalytic
5 media and at least one heat source; and
converting the target pollutant that passes through the catalytic media to a selected level
of destruction and removal efficiency (DRE).
2. The method of thermocatalytic pollution control of claim 1, further comprising the step
10 of:
rotating the thermocatalytic reactor.
3. The method of thermocatalytic pollution control of claim 1, wherein the passing step
further includes:
15 passing the target pollutant from within and through the catalytic media.
4. The method of thermocatalytic pollution control of claim 1, further comprising the steps
of:
passing the target pollutant into a second thermocatalytic reactor having at least one
20 catalytic media and at least one heat source; and
converting the target pollutant that passes through the catalytic media in the second
thermocatalytic reactor to another selected level of destruction and removal efficiency (DRE).
5. The method of thermocatalytic pollution control of claim 4, further comprising the steps
25 of:
rotating at least one of the first thermocatalytic reactor and the second thermocatalytic
reactor.

6. The method of thermocatalytic pollution control of claim 4, wherein the passing steps further include:

passing the target pollutant from within and through at least one of the catalytic media of the first reactor and the second reactor.

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7. The method of thermocatalytic pollution control of claim 4, wherein the first thermocatalytic reactor and the second thermocatalytic reactor are in series to one another.

8. The method of thermocatalytic pollution control of claim 4, wherein the first thermocatalytic reactor and the second thermocatalytic reactor are in parallel to one another.

9. The method of thermocatalytic pollution control of claim 1, wherein the one catalytic media includes: an elemental composition of Carbon, Oxygen, Hydrogen and Titanium.

10. The method of thermocatalytic pollution control of claim 1, wherein the one catalytic media includes:

approximately 1% to approximately 86% by weight Carbon;

approximately 1% to approximately 20% by weight Oxygen;

approximately 7% to approximately 15% by weight Hydrogen; and

approximately 1% to approximately 30% by weight Titanium.

11. The method of thermocatalytic pollution control of claim 1, wherein the one catalytic media includes: an elemental composition of Carbon, Hydrogen, Cadmium and Sulfur.

12. The method of thermocatalytic pollution control of claim 1, wherein the one catalytic media includes:

- approximately 30% to approximately 86% by weight Carbon;
- approximately 6.5% to approximately 14.3% by weight Hydrogen;
- approximately 1% to approximately 50% by weight Cadmium; and
- approximately 1% to approximately 15% by weight Sulfur.

13. The method of thermocatalytic pollution control of claim 1, wherein the one catalytic media includes:

- an elemental composition of Silicon, Oxygen, and Titanium.

14. The method of thermocatalytic pollution control of claim 1, wherein the one catalytic media includes:

- approximately 0% to approximately 35% by weight Silicon;
- approximately 30% to approximately 60% by weight Oxygen; and
- approximately 10% to approximately 60% by weight Titanium.

15. The method of thermocatalytic pollution control of claim 1, wherein the one catalytic media includes: an elemental composition of Silicon, Oxygen, Cadmium and Sulfur.

16. The method of thermocatalytic pollution control of claim 1, wherein the one catalytic media includes:

- approximately 25% to approximately 55% by weight Silicon;
- approximately 30% to approximately 60% by weight Oxygen;

approximately 5% to approximately 35% by weight Cadmium; and
approximately 1% to approximately 10% by weight Sulfur.

17. The method of thermocatalytic pollution control of claim 1, wherein the heat source
5 includes: a high flux light source.

18. The method of thermocatalytic pollution control of claim 1, wherein the heat source
includes: a temperature of at least approximately 300°C to approximately 400°C.

19. A thermocatalytic pollution control system comprising:
a target pollutant; and
a thermocatalytic reactor having at least one catalytic media and at least one heat source,
wherein the target pollutant is passed from within and through the one catalytic media converting
the target pollutant to a selected level of destruction and removal efficiency (DRE).

20. A thermocatalytic pollution control system comprising:
a target pollutant;
a thermocatalytic reactor having at least one catalytic media and at least one heat source;
and

20 means for rotating the catalytic media, wherein the target pollutant is passed from outside
and through the one catalytic media converting the target pollutant to a selected level of
destruction and removal efficiency (DRE).